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AUTHOR Maddux, James E.; Barnes, Jo Ann
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ABSTRACT

This paper reviews research on the relative utility of self-efficacy expectancy, outcome expectancy, and outcome value in explaining and predicting therapeutic behavior change. It proposes that these three cognitive mediators are basic factors in psychological and behavioral problems and in psychotherapy process, that they are logically independent, and can be manipulated independently in analogue research. A review of research on the relationships among these variables is presented, which revealed methodological problems that have resulted in misleading findings and inaccurate conclusions. Research is also reported that has attempted to rectify these methodological problems. The need for measures of self-efficacy expectancy, outcome expectancy, and outcome value which reflect their theoretical differentiation is stressed. (Author/JAC)

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Cognitive Processes in Psychotherapy and Behavior Change: Self-Efficacy Expectancy, Outcome Expectancy, and Outcome Value

James E. Maddux

Jo Ann Barnes

Texas Tech University

Paper presented at Meeting of American Psychological Association, August, 1984, Toronto

Address correspondence to James E. Maddux, Department of Psychology, Texas Tech University, Lubbock, Texas, 79409.

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Abstract

This paper reviews research on the relative utility of self-efficacy expectancy, outcome expectancy, and outcome value in explaining and predicting therapeutic behavior change. It is proposed that these three cognitive mediators are basic factors in psychological and behavioral problems and in psychotherapy process, are logically independent, and can be manipulated independently in analogue research. A review of research on the relationships among these variables reveals methodological problems that have resulted in misleading findings and inaccurate conclusions. Research is also reported that has attempted to rectify these methodological problems.

Cognitive Processes in Psychotherapy and Behavior Change: Self-Efficacy Expectancy, Outcome Expectancy, and Outcome Value

People tend to engage in behaviors that they believe will get them what they want. If a person desires some goal, object, or outcome and believes that a particular behavior is likely to help him achieve that goal or outcome, then he is more likely to perform or attempt to perform that behavior than if he either values the goal less or does not believe that the behavior in question is an effective means to the desired end. A number of important psychological theories are based on this simple premise: that people are likely to choose to engage in behaviors that they believe will result in desirable outcomes. These theories are generally known as "expectancy-value" theories because they deal with the values people place on certain ends or goals and with their expectations that certain behaviors will help them attain these goals.

Expectancy-value theories developed in the fields of learning and motivation (Tolman, 1932) and social psychology (Lewin, 1938) and have been adopted by a

large number of other theorists (e.g. Bolles, 1972; Edwards, 1961; Rogers, 1975; Rotter, 1954; Vroom, 1964). The differences among various expectancy-value theories are often subtle and, at times, merely semantic, yet all seek to explain behavior by appealing to the same basic assumptions concerning the value of goals, consequences, or outcomes, and the expectations of achieving those goals through the performance of certain behaviors.

A recent expectancy-value theory that has inspired considerable controversy and empirical research in social, clinical, and counseling psychology is self-efficacy theory, first described in detail by Bandura in 1977. Self-efficacy theory maintains that all processes of psychological change operate through the alteration of the individual's sense of personal mastery or efficacy (Bandura, 1977, 1982). According to this theory, psychological changes achieved through different methods and techniques can be explained and predicted by an evaluation of changes in the individual's expectations of self-efficacy, the belief that one is or is not capable of performing a behavior or set of behaviors. This theory also maintains that an expectancy held by a person concerning mastery or coping can be viewed as two related expectancies: An outcome

expectancy, the belief that a given behavior will or will not lead to a given outcome; and a self-efficacy expectancy, the belief that the person is or is not capable of performing the requisite behavior.

The expectancy component in expectancy-value theories (e.g., Bolles, 1972; Feather, 1959; Mitchell, 1974; Rogers, 1975; Vroom, 1964) is usually an outcome expectancy. Self-efficacy expectancies largely have been ignored in expectancy-value theory and research, although their existence and importance have been noted (Mitchell, 1974). Thus, the distinction between self-efficacy expectancy and outcome expectancy may help refine the expectancy-value framework. For example, in their review of goal setting and task performance research, Locke, Shaw, Saari, and Latham (1981) conclude that "expectations of success" are an important determinant of one's choice of goals. They state that these expectations "evidently stem from self-perceptions about ability on the task in question" (p. 144). This clear reference to self-efficacy expectancy, however, is made without distinction from outcome expectancy.

Psychotherapy and Behavior change

The concepts common to expectancy-value models may have some utility in explaining and describing the

process of psychotherapy, counseling, and behavior change. It is a general axiom of social learning theory and cognitive-behavioral approaches to personality, psychopathology, and psychotherapy that people often are distressed and often get themselves in trouble with their interpersonal environment because they hold inaccurate expectations about the behavior of other people and themselves, because they undervalue or overvalue certain outcomes or consequences of their behavior and the behavior of others, and because they feel incapable of doing those things that might obtain for them their goals.

For example, depressed individuals tend to expect rejection and criticism from other people, expect to fail at new tasks more than non-depressed people, and in general expect negative outcomes more often than positive outcomes in the course of daily events. (e.g., Beck, 1976). They also may feel less self-efficacious concerning their performance in everyday life situations (Kanfer & Zeiss, 1983). Depressed persons also may have distortions in their value or evaluation placed on certain outcomes such as achieving versus failing. The learned helplessness explanation of depression (Abramson, Seligman, Teasdale, 1978) can be viewed in

terms of distorted expectations about the relationship between the person's own behavior and its outcomes or consequences--distortions about expectations of control and non-control.

The irrational beliefs that are viewed as the major cause of psychological and emotional problems and that are the targets of change in rational-emotive therapy (e.g., Ellis, 1979) can be viewed as distortions or inaccuracies in expectancies and values. A client whose depression stems from the belief that she will never find the right mate and never be happily married is saying something very important about her self-efficacy expectancies and perhaps her outcome expectancies. A client who is devastated by perceived rejecton by another person (or actual rejection), who believes that it is catastrophic to be turned down when asking an attractive person for a date, is sufferring from a distortion in his or her valuation of specific outcomes--getting or not getting a date, or being accepted or rejected by another person, a person whom the individual may value too highly for his or her own good.

College students who seek academic and career counseling can be viewed as having expectancy-value

problems. Career and vocational indecision can be viewed as a problem of not knowing what one wants to do with one's life and career or having some uncertainty about what one's values are and how to go about achieving what one values (outcome expectancy). Vocational indecision can also involve expectations about not being able to achieve what one values because one believes one lacks the skill or ability (e.g., Betz & Hackett, 1981).

The point here is not that all psychological problems can be viewed best as expectancy-value problems, but that some can and that such a view may be a useful conceptualization for the therapist or counselor. We propose that three basic and simple cognitive mediating processes may be common to all attitude change and behavioral decision-making in psychotherapy and counseling: self-efficacy expectancy, one's belief concerning one's ability to execute a specified course of action; outcome expectancy, one's belief concerning the probability that this specified course of acton will lead to certain specified outcomes or consequences; and outcome value, the subjective value one places on certain specified outcomes or sets of outcomes. We make the assumption here that these three

congnitive mediators, are often important components of psychological problems and that changes in these cognitions are often important components of therapeutic changes in psychotherapy and counseling.

This paper is concerned primarily with questions about the relationship among these cognitions--the relationships between among self-efficacy expectancy, outcome expectancy, and outcome value -- and their relationships to behavior. We make three initial assumptions about these relationships, First, we assume that these variables are conceptually independent and can be operationally independent. Second, we assume that each influences the other in real-life decision-making such that perfect independence in settings other than the laboratory may be impossible to attain. In other words, we are saying that self-efficacy expectancies may sometimes influence outcome expectancies and vice versa (maybe most or all of the time) but that self-efficacy expectancies and outcome expectancies are not the same thing. If relative independence can be demonstrated in the laboratory, then this is good reason to assume that psychotherapy clients may be capable of using these kinds of information relatively independently in making

decisions. The third assumption is that these cognitions mediate and can predict behavior change.

A careful examination of much recent self-efficacy research reveals that some conclusions about of the relationships between self-efficacy expectancy, outcome expectancy, and outcome value, and their contributions in predicting behavior are based on studies in which concepts and variables were not carefully defined and operationalized. The discussion to follow is not intended to be a comprehensive review of expectancy-value or self-efficacy research but is intended to summarize and provide examples of these methodological problems and of the basic premise that expectations about behavioral ability, expectations about behavioral outcomes, and the subjective value of outcomes are logically independent, can be separated empirically, and jointly are better predictors of behavior than when used alone. We will focus primarily on self-efficacy expectancy and outcome expectancy since research on outcome value has only very recently begunto examine this variable in relation

toself-efficacyexpectancy and outcome expectancy.

Self-Efficacy Expectancy

Providing extensive detail concerning the utility of self-efficacy expectancies in predicting behaviors is unnecessary in this paper. The work of Bandura and his associates (Bandura, Adams, & Beyer, 1977; Bandura, Adams, Hardy, & Howell, 1980) and studies by other researchers (e.g., Condiotte & Lichtenstein, 1981; Fleming & Thornton, 1980) clearly have established that changes in self-efficacy expectancy and changes in behavior are correlated highly and that self-efficacy is an excellent predictor of behavior. In addition, experimental research has been supportive of the importance of self-efficacy expectancies (Bandura, Reese, & Adams, 1982; Davis & Yates, 1982; Maddux & Rogers, 1983).

Outcome Expectancy

The predictive usefulness of outcome expectancy depends largely on the degree to which it can be distinguished operationally from self-efficacy expectancy. Although the distinction between outcome expectancy and self-efficacy expectancy is a logical one, difficulties may arise in the differential manipulation and assessment of those variables. Manning and Wright (1983) emphasize the need to specify clearly

the definition of outcome and the need to avoid confounding self-efficacy expectancy and outcome expectancy by developing "operations . . . that reflect their theoretical differentiation and that subjects can respond to differentially" (p. 422).

Despite this cautionary note, Manning and Wright's own research reflects the difficulties researchers have had in differentiating self-efficacy expectancy from outcome expectancy. In a study of the prediction of pain medication use in childbirth, they found that self-efficacy expectancy and outcome expectancy were correlated highly ($r = .75$). Manning and Wright also found that self-efficacy expectancy and outcome expectancy were largely redundant in predicting mastery but that self-efficacy expectancy was the better predictor.

A possible explanation for this redundancy is an apparent confounding between their self-efficacy and outcome expectancy measures. Their self-efficacy expectancy measure dealt with "anticipated ability to control the pain of labor and delivery without pain medication" (p. 424). The outcome expectancy item concerned the perception that "the techniques for controlling pain . . . will make it possible for a woman

to go through labor and delivery without pain medication" (p. 425). Ideally, self-efficacy expectancy measures should deal with an individual's perception of his or her ability to perform a behavior or set of behaviors and not with the possible outcomes of those behaviors. Manning and Wright's self-efficacy measure deals not with ability to perform pain-reducing techniques (a set of behaviors) but with ability to control pain without medication -- with the outcome of performing these behaviors. What they appear to have used as a measure of self-efficacy expectancy is a variation of their outcome expectancy measure. This confounding calls into question their findings and their interpretations, particularly the implication that self-efficacy expectancy and outcome expectancy cannot be differentiated and independently manipulated.

Two studies that have attempted to manipulate experimentally self-efficacy expectancy and outcome expectancy (Maddux & Rogers, 1983; Maddux, Sherer, & Rogers, 1982) also reflect the difficulties in their differentiation. Using different target behaviors (cigarette smoking in Maddux & Rogers, 1983; assertiveness in Maddux et al., 1982), these studies both found interactions between an outcome expectancy

manipulation and a self-efficacy expecancy manipulation on a self-efficacy measure such that self-efficacy information was more effective under low outcome expectancy than under high outcome expectancy. Successful manipulation of these two variables would have resulted in independent effects on their respective measures rather than an interaction.

Problems can be found also in other recent attempts to differentiate self-efficacy expectancy from outcome expectancy. For example, Lee (1984a, 1984b) examined these variables in a snake approach task and an assertiveness task. In each case, self-efficacy was defined operationally in the dependent measures as degree of certainty of being able to perform the behavior in question. Outcome expectancy, however, was defined in terms of outcome valence or value. Subjects were asked to rate the outcome from negative to positive rather than provide their expectations that certain outcomes would occur. This confounding of outcome expectancy and outcome value makes it difficult to draw conclusions from these studies about the relationship between self-efficacy expectancy and outcome expectancy and their relative contributions in predicting behavior.

In addition, in a study of self-efficacy

expectancy, outcome expectancy and performance deficits, Davis and Yates (1982) correctly defined self-efficacy expectancy in terms of ability to perform successfully the target behavior. Their measure of outcome expectancy, however, was not concerned with the probability that a behavior would lead to an outcome but with subjects' perceptions of the ability of other people to perform the target behavior. Such a measure seems related more closely to self-efficacy expectancy than outcome expectancy. Again, conclusions about relative contributions of self-efficacy expectancy and outcome expectancy are difficult to draw from such results.

In another recent study, Barling and Abel (1983) examined the relationships among self-efficacy expectancy, outcome expectancy, outcome value, and tennis performance. The self-efficacy expectancy, outcome expectancy, and outcome value measures were clearly distinct and consistent with logical and conceptual differentiations. It was found that only self-efficacy expectancy was correlated consistently with the behavioral measure of tennis performance. The difficulty with this study, however, is that the behavioral performance measures were self- and

other-ratings of ability at various tennis skills, not the individual's decision to engage in specific behaviors. What this study demonstrates, therefore, is that self-efficacy ratings are related to ability ratings. The study says nothing about the relative contributions of self-efficacy expectancy, outcome expectancy, and outcome value in predicting intentions or behaviors.

Cooney, Kopel, and McKeon (1982) examined the relative efficacy of cognitive and behavioral treatment strategies in teaching ex-smokers to cope with the aftermath of a smoking relapse. Self-efficacy expectancy and outcome expectancy were assessed in order to understand the process of treatment-induced change and maintenence of that change. These researchers reported finding that outcome expectancy, but not self-efficacy expectancy, was associated with length of smoking abstinence. Such a finding could be interpreted as suggesting that expectations of self-efficacy may not always bear as strong of a relationship to smoking behavior as perceived outcome probabilities. However, the measure of outcome expectancy which these researchers employed in their study can be criticized as inappropriate. Cooney et al.'s measure of outcome

expectancy assessed subjects' expectations about the taste of a cigarette (ranging from "unusually good" to "really bad"). Their measure of outcome expectancy not only refers to an outcome associated with cigarette smoking (e.g., that cigarette smoking results in leaving a taste in one's mouth) but also assesses the value attached to this particular outcome. Thus, their measure of outcome expectancy is not differentiated clearly from outcome value. Therefore, the conclusion reached by these researchers, that outcome expectancy is superior to self-efficacy expectancy to predicting behaviors, is questionable.

The studies reported above highlight the difficulties that researchers have had in developing measures of self-efficacy expectancy, outcome expectancy, and outcome value that reflect their theoretical definition and differentiation. One study (Wheeler, 1983) that appears to stand as an exception to this rule found evidence that self-efficacy expectancy, outcome expectancy, and outcome value may all make independent contributions in accounting for variance in behavior. This study assessed subjects' efficacy expectations for 17 different occupations. The instrumentality of each occupation in attaining certain

outcomes (outcome expectancy), as well as the perceived desirability of these outcomes (outcome value) were also assessed. An expectancy-value measure was derived for each subject by multiplying each anticipated outcome by its rated value and summing these products. A measure of occupational preference served as the main dependent variable. Wheeler found that both self-efficacy expectancy and expectancy-value scores were significantly related to occupational preference. Further, although self-efficacy perceptions were related more strongly to occupational preference than was the expectancy-value measure, both were found to make independent contributions to the variance in occupational preference. The results of the study suggest that self-efficacy expectancy, outcome expectancy, and outcome value all make significant and independent contributions in accounting for variance in behavior. However, because the predictive utility of outcome expectancy and outcome value were not assessed separately and because no behavioral measures were taken in Wheeler's study, such a conclusion can only be made tentatively at best.

Meier, McCarthy, and Schmeck (1984) examined how well self-efficacy expectations and outcome expectations

(as well as a number of other variables) predicted writing peformance among college freshmen enrolled in writing courses. Subjects completed measures of these variables during the first and last weeks of a 16-week semester. Samples of subjects' writing performance were scored by raters trained in composition assessment. Writing performance was defined as the number of writing tasks (represented in the items of the efficacy measure) successfully completed by students. Stepwise regression analyses indicated that at the first week self-efficacy expectancy was a good predictor of writing performance, with more efficacious persons being better writers. Outcome expectancy failed to serve as a signficant predictor of writing performance at either phase. However, their measure of students' outcome expectations can be criticized as inappropriate. Whereas the efficacy expectations measure assessed students' efficacy expectations for successfully performing the 19 tasks comprising writing performance measure, Rotter's (1966) I-E scale was used to measure outcome expectations. Thus, whereas the self-efficacy measure specifically pertained to the writing behaviors that were assessed, the outcome expectancy measure failed to assess subjects' beliefs that performing the behaviors

assessed would lead to certain outcomes. The failure of outcome expectations to predict the behavior in question is therefore not at all surprising.

Barling and Beattie (1983) assessed (in addition to a number of other variables) insurance sales representatives' self-efficacy beliefs for performing job related behaviors and outcome expectations for successful performance of job-related behaviors. The self-efficacy expectancy and outcome expectancy measures were defined consistent with their theoretical definition and distinction. Four different measures of actual sales performance were assessed, reflecting diverse aspects of sales performance. Multiple regression analyses revealed that self-efficacy beliefs significantly predicted all four indices of sales performance. However, outcome expectancy failed to serve as a significant predictor of any of the behavioral measures. Although the results of the multiple regression analysis certainly demonstrated that self-efficacy expectancy was superior to outcome expectancy in predicting sales performance, this type of analysis fails to address the question of whether outcome expectancy can make a <u>significant independent contribution</u> to self-efficacy in accounting for variance

in sales performance. Hierarchical multiple regression analysis (Cohen & Cohen, 1975) would address this question. It is recommended that future research assessing the relative utility of expectancy-value concepts in predicting behavior make use of hierarchical multiple regression.

Outcome Value

Outcome value has been proposed as an additional component of a self-efficacy model (Maddux & Rogers, 1983; Teasdale, 1978) but has been studied little. Most research on self-efficacy theory examines the role of self-efficacy expectancy as a predictor of behaviors whose outcomes are assumed to be highly valued by the individuals involved. For example, it can be assumed that snake phobic persons desire to lose their fears and thus value the outcome of their treatment and that depressed persons desire to be less depressed and thus value the outcomes of the behaviors they are asked to initiate. Even for phobic and depressed persons, however, measuring and taking into consideration individual differences in their valuation of the outcome of the proposed behavior changes may increase predictive accuracy. Manning and Wright (1983) also emphasize the need for including outcome value or importance as a

variable in self-efficacy theory research. Manning and Wright included an assessment of outcome value and found that it was related to mastery criteria and to outcome expectancy and self-efficacy expectancy but was not useful in predicting mastery relative to the two expectancies, possibly because of the narrow range in the importance of the outcome among their subjects.

Eccles (Parsons), Adler, and Meece (1984) administered a questionnaire to 8th-10th graders assessing their perceived ability in mathematics and English (self-efficacy expectancy), the subjective value of these two types of courses, and the perceived difficulty (also a self-efficacy rating) of these types of courses Dependent measures include grades achieved in the courses, students plans to enroll in these courses in the future when enrollment would no longer be required, and actual enrollment decisions. These researchers found that whereas self-concept of ability was most strongly related to grades in these courses, subjective value was most strongly related to students' enrollment plans and actual enrollment decisions. However these results must be viewed with caution due to problems in their dependent measure of perceived ability. The three types of attitudes assessed in the

questionnaire were derived via a factor analysis of items contained on the questionnaire. This anlaysis yielded a three factor solution.

Examination of items comprising the perceived ability measure suggests that labeling the items loading on this factor as pertaining to "self-concept of ability" is erroneous and misleading. For example, three of the items which appear on the Self-Concept of Math Ability scale are: "How successful do you think you would be in a career which required math ability?" "How well do you expect to do in math this year?" "How good are you at math?" As is evident, these items are ambiguous in nature. It is unclear whether they refer to perceived ability in math (self-efficacy expectancy) or to outcome expectations. For example, the first item could be interpreted as either referring to perceived ability to solve math problems or to the expectation that solving math problems will lead to certain outcomes (e.g., making lots of money, social prestige). Thus, this confounding of their perceived ability measure with otucome expectations makes conclusions regarding the relative utility of self-efficacy and outcome value in predicting academic behavior in their study problematic.

Self-Efficacy Expectancy vs. Outcome Expectancy vs. Outcome Value

In a recent study (Maddux, Norton, & Stoltenberg, 1984), we attempted to manipulate these variables independently by operationalizing and measuring them in a manner more consistent with the conceptual distinction. The goal of this attempt was not to determine whether people usually do make a distinction between self-efficacy expectancy and outcome expectancy in making decisions but whether people can make this distinction. Prior failures to find such a distinction, such as in Manning and Wright, may reflect flaws in the ways we have assessed how people think instead of reflecting accurately how they think. This study (as in Maddux & Rogers, 1983; Maddux et al., 1982) attempted to manipulate directly these variables and assess their direct effect on behavioral intentions. The relationships among these three variables (via correlational analysis) were also of interest, as were their relationships with intentions. Of primary interest was the relationship between self-efficacy expectancy and outcome expectancy.

Self-efficacy expectancy, outcome expectancy, and outcome value for a specific interpersonal behavior were

manipulated factorially by the use of written communications. The effects of these communications were measured by self-reported intentions to perform the behavior described. In light of demonstrated relationships between intentions and behaviors (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975), intentions to engage in behaviors are an appropriate dependent measure in this type of theoretical investigation. It was hypothesized that self-efficacy expectancy, outcome expectancy, and outcome value each would have independent main effects on intentions to perform the behavior described, with higher levels of each producing stronger behavioral intentions. The prediction of a self-efficacy expectancy main effect was made guardedly in light of the absence of such an effect in a previous study we conducted (Maddux et al., 1982).

As predicted, outcome expectancy and outcome value manipulations each had main effects on behavioral intentions with higher levels of each resulting in stronger intentions. The outcome value effect, however, must be viewed cautiously since one component of the outcome value manipulation check, an importance measure, did not achieve significance, although the social norms component of outcome value was manipulated successfully.

In retrospect, it appears that the importance manipulation check items did not correspond closely enough to the information in the manipulations; this may account for their failure to achieve significance. Self-efficacy expectancy failed to produce a main effect on intentions despite its successful manipulation. Correlational analyses revealed that outcome expectancy and self-efficacy expectancy were independent and non-redundant in predicting behavioral intentions. In addition, it was found that self-efficacy expecancy, outcome expectancy, and outcome value (importance) were each significant and roughly equivalent predictors of intentions in the correlational analysis.

The present study replicated the results of Maddux, et al. (1982), by finding a main effect for outcome expectancy on behavioral intentions using the same manipulations and measures with a sample drawn from a different geographical location. Likewise, the present study failed to find a significant main effect for self-efficacy expectancy despite successful manipulation of the variable, again replicating Maddux et al. (1982). This provides further support for the suggestion that self-efficacy may not always be the most important predictor of behavioral intentions (Eastman &

Marzillier, 1984; Maddux et al., 1982) and for the importance of outcome expectancy as a predictor independent of self-efficacy expectancy.

The correlational analyses in this study also bear on the importance of outcome expectancy and probably are understood best in relation to Manning and Wright (1983). Manning and Wright found a strong correlation ($r = .75$) between self-efficacy expectancy and outcome expectancy. The present study, on the other hand, found little relationship between these variables ($r = .13$), thus indicating that they can be differentiated in line with the logical and conceptual distinction. As stated previously, the strong correlation between self-efficacy expectancy and outcome expectancy in Manning and Wright is most likely the result of the manner in which they operationalized these concepts. Their self-efficacy measure appears to be measuring expectations of outcomes rather than expectations of ability to perform a behavior or behaviors. In the present study, however, the wording of the manipulation check items made a more clear distinction between the individual's expectations of being able to execute the behavior and his or her expectations of the consequences of executing the behavior.

The difference in the measurement of self-efficacy expectancy and outcome expectancy and the difference in the correlations between them also may explain the difference between the present study and Manning and Wright in the relative predictive utility of self-efficacy expectancy and outcome expectancy. Manning and Wright found self-efficacy expectancy to be a more powerful predictor of behavior than outcome expectancy. The present study, however, found them to be equally good predictors and found that outcome expectancy added as much predictability to self-efficacy expectancy as self-efficacy expectancy added to outcome expectancy. The fact that outcome expectancy was not correlated significantly with self-efficacy expectancy in the present study explains its emergence as a non-redundant predictive partner to self-efficacy in this study. In a more recent study (Stanley & Maddux, 1984), we found an outcome expectancy/self-efficacy expectancy correlation of .24. Although this correlation is statistically significant, it is considerably lower than Manning & Wright's .75. These findings, therefore, support the well-established importance of self-efficacy expectancy as a cognitive mediator, but they also support the notion that outcome

expectancy may be an equally important cognitive mediator when operationalized consistent with its theoretical definition. It appears, therefore, that these two expectancies can be differentiated in line with their theoretical distinction and that both can be important and independent predictor variables.

Outcome value or importance also has been a variable relatively neglected in self-efficacy theory research. This study attempted to manipulate outcome value and assess its predictive value relative to self-efficacy expectancy and outcome expectancy, although the attempt was only partially successful since only the social norms manipulation checks and not the importance items achieved significance. We did find, however, that outcome value (importance) added to both self-efficacy expectancy and outcome expectancy in predicting behavioral intentions in the correlational analysis.

At first glance, this study appears to be a methodologically sound examination of the relative predictive utility of self-efficacy expectancy, outcome expectancy, and outcome value. Upon closer examination, however, the question can be raised as to whether this study was successful in differentially manipulating

outcome expectancy and outcome value. In this experiment, the outcome expectancy manipulation involved telling subjects that the assertive technique was either very effective (high outcome expectancy) or not very effective (low outcome expectancy). In the attempt to manipulate the value that subjects attached to the outcome associated with performing the assertive response, entirely new set of outcome was introduced that subjects could expect as a result of performing the assertive response. In the high-value condition, subjects were told that performing the behavior would produce increased success in problematic encounters, increased self esteem, and greater life satisfaction. In the low-value condition, an opposing argument was used. Although outcome value may have been manipulated in the process, the manipulation also involved outcomes subjects could expect as a result of engaging in the assertive response. A more methodologically sound approach to manipulating outcome value would involve attempting to manipulate the value attached to a particular anticipated outcome without simultaneously introducing an entirely new set of anticipated outcomes in the process (Barnes, 1984).

Because of this methodological problem in the

manipulation of outcome value, it is unclear whether the significant main effect found for outcome value on behavioral intentions is attributable to the differential value subjects attached to the outcome associated with performing the assertive technique or to the differential set of outcomes subjects were simultaneously led to expect as a result of the outcome-value manipulation. This renders questionable the interpretation, based upon the analysis of variance, that outcome value had a significant main effect on behavioral intentions. However the finding, from heirarchical multiple regression analysis, that outcome value added significantly to both self-efficacy expectancy and outcome expectancy in predicting behavioral intentions does suggest that self-efficacy expectancy, outcome expectancy, and outcome value are all equally-important predictors of behavior and that predicitve accuracy can be maximized by taking into account all three cognitive variables. Nevertheless, the presence of the confounding in their study makes it impossible to draw conclusions concerning the power of outcome value, relative to self-efficacy expectancy and outcome expectancy, in influencing and determining behavioral intentions.

Summary

Research on the relative utility of self-efficacy expectancy, outcome expectancy, and outcome value in predicting and influencing behavior has generally been plagued with difficulties in the differential manipulation and measurement of these variables. In the future, researchers interested in assessing the relative predictive utility of self-efficacy expectancy, outcome expectancy, and outcome value can improve upon past research in this area by devising measures of these variables which reflect their theoretical differentiation. In assessing the relative power of these three congnitive variables in influencing behavior, future researchers need to guard against confounding their manipulations of self-efficacy expectancy, outcome expectancy, and outcome value. Attempts at differentially manipulating self-efficacy expectancy, outcome expectancy, and outcome value can be improved upon by taking care to devise manipulations of these cognitive variables which reflect their theoretical differentiation.

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